

CLAIMS

1. A rotation driving device for a construction machine comprising an electric motor for driving a rotational system of said construction machine, an operating member for instructing an operation of said electric motor, and a controller for controlling said electric motor according to an operation command from said operating member,

wherein said controller has an emulation model for simulating dynamic characteristics of a hydraulic rotational driving device in real time, and a target value for control is calculated by use of said emulation model according to the operation command from said operating member to control said electric motor.

2. The rotation driving device for the construction machine according to claim 1, wherein said emulation model individually has specifications of a hydraulic pump, a hydraulic actuator and various valves as hydraulic equipment.

3. The rotation driving device for the construction machine according to claim 2, wherein an input unit is connected to said controller, so that each of said specifications in said emulation model is changed through said input unit.

4. The rotation driving device for the construction machine according to claim 2, wherein said emulation model has nonlinear characteristic of a flow control valve or pressure control valve as said valve.

5. The rotation driving device for the construction machine according to claim 1, wherein either one or two or more of an external power source, a built-in battery, a generator driven by an engine and a capacitor are selected as a power source of said electric motor.

6. The rotation driving device for the construction machine according to claim 1, wherein said rotational system includes at least one of a rotating system having a rotating motor as driving source, a hoisting system with a winch motor as driving source, and a traveling system with a traveling motor as driving source.